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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/805,529	03/13/2001	Akira Shiokawa	NAK1-BO21	2114

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EXAMINER
NGUYEN, JIMMY H

ART UNIT	PAPER NUMBER
2629	

DATE MAILED: 09/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/805,529	SHIOKAWA ET AL.	
	Examiner	Art Unit	
	Jimmy H. Nguyen	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2,3,5-11,17-20,22,29,31-34 and 39-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *17-20,22 and 33* is/are allowed.

6)☒ Claim(s) *2,3,5-11,29,31,32,34 and 39-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/8/2006 has been entered. Claims 2, 3, 5-11, 17-20, 22, 29, 31- and 39-46 are currently pending in the application. An action follows below:

Claim Objections

2. Claims 2, 7, 29, 31, 32 and 34 are objected to because of the following informalities: "of a potential difference generated between the first electrode and the second electrode by the sustain pulse" in last two lines should be changed to -- of the immediately followed sustain pulse of said potential difference generated between the first electrode and the second electrode", in order to clarify the claimed invention. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 2, 3, 5-11 and 39-46 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claims 2, 3, 5-11, 29, 39, 40 and 43, it is not clear what the applicant means "a potential difference in the form of a short pulse between the first electrode and the second electrode..." presently recited in lines 8-9 of independent claims 2, 7 and 29, i.e., a short pulse is

between the first electrode and the second electrode or a potential difference between the first electrode and the second electrode.

Additionally to claim 40, this recites the limitation "**the other one** of the first electrode and the second electrode" in last two lines. There is insufficient antecedent basis for this limitation in the claim.

As to claim 41, it is not clear what the applicant means "a short pulse for reducing wall charge on the discharge cells immediately followed by a sustain pulse of opposite polarity" presently recited in last two lines, i.e., a short pulse is immediately followed by a sustain pulse of opposite polarity or the discharge cells are immediately followed by a sustain pulse of opposite polarity.

As to claims 42 and 44-46, these claims depend upon the cancelled claims 1 and 4.

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 2, 3, 5-11, 29, 39, 40, 41 and 43 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As to claims 2, 3, 5-11, 29, 39, 40, 41 and 43, the disclosure, when filed, does not fairly convey to one of ordinary skill in the art that applicants had in their possession the claimed features, "the driving circuit generates a potential difference between the first electrode and the

second electrode" presently recited in independent claims 2, 7 and 29 and "a drive circuit for generating an alternating sustain waveform between the scan electrodes and the sustain electrodes" of claim 41. Note that the waveform of the potential difference between electrodes 19a and 19b as shown in any of figs. 15 and 22-24 is not a waveform of a signal applied from either a scan driver 104 or a sustain driver 105. As best understood, the waveform of the potential difference between electrodes 19a and 19b is only a virtual signal to illustrate a potential difference between electrodes 19a and 19b during the sustaining period in an AC PDP device, and such waveform of the potential difference between electrodes 19a and 19b is not actually generated by any driving circuit itself. Accordingly, these claims contain the above underlined features, which were not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Additionally, to claims 39 and 40, these claims may include the limitation, "**immediately before** the leading edge of each sustain pulse applied to the first (scan) electrode, applying a short pulse of a same polarity as the sustain pulse to the (first) scan electrode". Note that these claims depend upon claim 2, which is only readable in the second embodiment as illustrated by Fig. 15. However, Fig. 15 (see the waveform of potential electrode 19a) expressly shows a short pulse (V1) applied to the scan electrode 19a **after** the falling edge and the leading edge of a sustain pulse (V2) applied to the scan electrode. Accordingly, these claims contain the above underlined features, which were not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Additionally, to claim 41, this claim recites a limitation, "a short pulse for reducing wall charge on the discharge cells", which was not found in the original disclosure, when filed.

7. It is noted Applicants that due to the rejections under 35 USC 112, first and second paragraphs above, the following art rejections are based as best understood by the Examiner.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 2, 7, 29, 31, 32, 34 and 39-41 are rejected under 35 U.S.C. 102(e) as being anticipated by Mitkoshiba et al. (US 6,456,265 B1), hereinafter Mikoshiba.

As per claims 2, 7, 31, 32 and 41, the claimed invention reads on Mikoshiba as follows: Mikoshiba discloses a panel display apparatus and an associate method for displaying an image in a discharge sustain period, the apparatus comprising a discharge panel (a plasma display panel, see col. 6, line 24) including a plurality of pairs of first electrodes (common electrodes 3, see Fig. 8A) and second electrodes (scanning electrodes 2, see Fig. 8A) covered with a dielectric (a dielectric layer 7, see Fig. 8A); and an inherent driving circuitry for applying a write pulse (scanning pulse 24, see col. 4, lines 11-14, also fig. 3) to selected discharged cells to accumulate a wall charge on the dielectric to write an image and for successively applying a plurality of sustain pulses (18a, 18b) to scanning electrodes and common electrodes (see Fig. 14), so that a potential difference between the second and the first electrodes alternates in polarity (the

potential difference between the scan electrode 2 and the sustain electrode 3 during a sustain period can be obtained by subtracting the common electrode signal 13 from the scanning electrode signal 12 during the sustain period, see Fig. 14). Mikoshiba also teaches that immediately before a leading edge of each sustain pulse (18b) applied to first (common) electrode (3), the driving circuit applies a voltage to the first (common) electrode (3), so that a short pulse (26), which is opposite in polarity with the adjacent sustain pulse (18b), is formed between the first (common) electrode (3) and the second (scanning) electrode (2). Mikoshiba further discloses the short pulse (26) applied for a predetermined period of 40ns or 100ns (see col. 7, lines 45-62) and immediately before a leading edge of each sustain pulse (18b) (see Fig. 14, especially waveform 13, which shows a negative short pulse 16 immediately before the leading edge of a sustain pulse 18b. Note that the leading edge of the sustain pulse 18b starting from a transition point, where the negative short pulse 26 just ends with a transition "0" volt, for a short time and then rising to the peak, as shown in Fig. 14), which depends on the panel structure and physical characteristics of the display apparatus (see col. 9, lines 17-23). Accordingly, the elements and the steps in these claims are read in the Mikoshiba reference.

As per claims 29, 34, 39 and 40, the claimed invention reads on Mikoshiba as follows: Mikoshiba discloses a panel display apparatus and an associate method for displaying an image in a discharge sustain period, the apparatus comprising a discharge panel (a plasma display panel, see col. 6, line 24) including a plurality of pairs of first electrodes (common electrodes 3, see Fig. 8A) and second electrodes (scanning electrodes 2, see Fig. 8A) covered with a dielectric (a dielectric layer 7, see Fig. 8A); and an inherent driving circuitry for applying a write pulse (scanning pulse 24, see col. 4, lines 11-14, also fig. 3) to selected discharged cells to accumulate

a wall charge on the dielectric to write an image and for successively applying a plurality of sustain pulses (18a, 18b) to scanning electrodes and common electrodes (see Fig. 14), so that a potential difference between the second and the first electrodes alternates in polarity (the potential difference between the scan electrode 2 and the sustain electrode 3 during a sustain period can be obtained by subtracting the common electrode signal 13 from the scanning electrode signal 12 during the sustain period, see Fig. 14). By virtue of the potential difference between the scan electrode 2 and the sustain electrode 3 during a sustain period, Mikoshiba also teaches that immediately after a trailing edge of each sustain pulse (18), the driving circuit applies a short pulse that is opposite in polarity with the adjacent sustain pulse (18) (see Fig. 14, **col. 6, lines 55-61**). Mikoshiba further discloses the short pulse (26) being applied for a predetermined period of 40ns or 100ns (see and col. 7, lines 45-62), which depends on the panel structure and physical characteristics of the display apparatus (see col. 9, lines 17-23). Accordingly, the elements and the steps in these claims are read in the Mikoshiba reference.

Allowable Subject Matter

10. Claims 17-20, 22 and 33 are allowed.

Response to Arguments

11. Applicant's arguments, see pages 14-16 of the amendment filed on 07/12/2006, with respect to the drawing objection, the specification objection, the claim objections and the rejections under 35 USC 112, first and second paragraphs, in the office Action dated 04/13/2006, have been considered and they are persuasive in light of the claim cancellation and amendment to the claims except for the rejection under 35 USC 112, first paragraph, to claims 39 and 40. See the detailed rejection above.

12. Applicant's arguments, see pages 16-18 of the amendment filed on 07/12/2006, with respect to the rejection under 35 USC 102(e) in the Office Action dated 04/13/2006, have been fully considered but they are not persuasive. With respect to claims 2, 7, 31, 32, 39 and 40, Applicants argue "Mikoshiba's short pulse 26 ends with a transition to 0 volt where there is a time delay before the leading edge of the sustain pulse 18", see page 17, lines 10-11. Examiner disagrees with that because as discussed in the detailed rejection, the leading edge of the sustain pulse 18b extending from a point when the negative short pulse 26 just ends with a transition "0". In other words, the leading edge of the sustain pulse 18b starting with a transition "0" volt for a short time and then rising to the peak, as shown in Fig. 14. Applicant further argue "The waveform differences can be clearly seen by comparing Applicant's Figure 15, ... with Fig. 14, ... transition", see page 17, lines 14-16. Examiner disagrees because the limitations in the disclosure can't be read into the claim.

With respect to claims 29 and 34, Applicants argue "there is no disclosure of a short pulse immediately after the trailing edge of a sustain pulse", see last paragraph of the amendment filed on 07/12/2006. Examiner disagrees because Mikoshiba further discloses at col. 6, lines 55-61, "For this purpose, a negative pulse is applied as the space charge controlling non-discharge pulse 26 ... **immediately after** both discharge sustaining pulses 18a and 18b..."

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy H. Nguyen whose telephone number is 571-272-7675. The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached at 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JHN
September 14, 2006

Jimmy H. Nguyen
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